



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/634,770

08/06/2003

Shigeo Ohashi

500.40473CX1

6841

20457

7590

09/27/2004

ANTONELLI, TERRY, STOUT & KRAUS, LLP  
1300 NORTH SEVENTEENTH STREET  
SUITE 1800  
ARLINGTON, VA 22209-9889

EXAMINER

CHANG, YEAN HSI

ART UNIT

PAPER NUMBER

2835

DATE MAILED: 09/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/634,770

Applicant(s)

OHASHI ET AL.

Examiner

Yean-Hsi Chang

Art Unit

2835

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 August 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 09/934,594.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/6/03</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Double Patenting*

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-8 and 17-24 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-2 and 16 of U.S. Patent No. 6,611,425 B2 ('425). Although the conflicting claims are not identical, they are not patentably distinct from each other because all subject matters claimed are covered by claims 1-2 and 16 of '425 except: a keyboard which is an inherent feature of a computer, a portion of a tube being made of a flexible tube that is obvious since said tube is extending through hinges along an axis of rotation between housings as stated in claim 16 of '425, and a liquid circulator having a thickness less than a height of a main body that is obvious since liquid-moving means being located in a first housing as stated in claim 1 of '425 and a liquid-moving means may be a liquid circulator.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 4-6, 17 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohashi et al. (US 5,764,483).

Ohashi teaches an electronic apparatus (fig. 1) comprising: a main body having a housing (10, fig. 1) mounting parts including a plural number of electronic parts (shown in fig. 1) therein, a display device (8, fig. 1) having a housing (10', fig. 1), a keyboard (4, fig. 1), a heat-receiving member (14, fig. 1) being thermally connected with a semiconductor element (12, fig. 1) as a heat generating member among said electronic parts, and having a first flow passage (shown in fig. 2, not labeled) in which a liquid flows through (see col. 3, line 66 through col. 4, line 1), a heat-dissipating member (16, fig. 1) being disposed on a wall of at least one of said housings of said main body and said display device (shown in fig. 1), so as to dissipate heat therefrom into an outside air atmosphere, and having a second flow passage (36, fig. 4) in which the liquid flows through, a tube (18) for connecting said first flow passage of said heat-receiving element and said second flow passage of said heat-dissipating element (shown in fig. 4), and a heat transfer device including therein a liquid circulator (40, fig. 4) for

Art Unit: 2835

circulating said liquid through said first and second flow passages between said heat-receiving element and said heat-dissipating element (claims 1, 6, 17 and 22); wherein said display is pivotally supported on said main body (shown in fig. 1) and a portion of said tube is made of a flexible tube (18 being flexible, see col. 3, lines 51-52) (claims 4 and 20); and wherein said liquid circulator has a thickness less than a height of said main body (if it's to be mounted in the main body) (claims 5 and 21).

Ohashi fails to teaches said liquid circulator produces a liquid circulating flow rate so that a difference between a maximum temperature and a minimum temperature of said circulating liquid at least in said first and second flow passages is not greater than a difference between an upper limit temperature of said heat generating member and an outside air temperature of the electronic apparatus.

Under a normal operating condition, the liquid cooling system claimed is used to remove heat from the heat generating member inside the electronic apparatus to the outside air of the electronic apparatus. By Law of Physics, the temperature of the heat generating member is equal or higher than the temperature of the circulating liquid of the cooling system which is equal or higher than the outside air temperature. Therefore, it would have been obvious to one having ordinary skill in the art that the difference between a maximum temperature and a minimum temperature of the circulating liquid at least in said first and second flow passages is not greater than a difference between an upper limit temperature of said heat generating member and an outside air temperature of the electronic apparatus.

Art Unit: 2835

5. Claims 2-3, 7-16, 18-19 and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohashi et al.

Ohashi discloses the claimed invention except specifying the liquid circulator being able to provide a liquid circulating flow rate within a limit ranging from 120 $\mu$ L/sec. to 1200 $\mu$ L/sec. so that at least 10% of a sum of a temperature difference between the semiconductor element (or heat generating member) and said heat receiving element (or member) and a temperature difference between said heat-dissipating element (or member) and an outside air temperature of said electronic apparatus is obtained.

It is well known that a liquid circulator in a heat transfer device for an electronic apparatus is an on-the-shelf device. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Ohashi with a liquid circulator being able to provide a liquid circulating flow rate between 120  $\mu$ L/sec.-1200  $\mu$ L/sec. for providing an adequate heat transferring device for an electronic apparatus.

### ***Correspondence***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yean-Hsi Chang whose telephone number is (571) 272-2038. The examiner can normally be reached on 07:30-16:00.

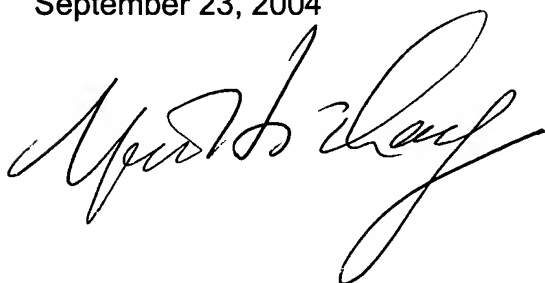
If attempts to reach the examiner by telephone are unsuccessful, the Art Unit phone number is (571) 272-2800, ext. 35. The fax phone number for the organization

Art Unit: 2835

where this application or proceeding is assigned is (703) 305-3431 for regular communications and for After Final communications. There are RightFax numbers and provide the fax sender with an auto-reply fax verifying receipt by the USPTO: Before-Final (703-872-9318) and After-Final (703-872-9319).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-8558.

Yean-Hsi Chang  
Patent Examiner  
Art Unit: 2835  
September 23, 2004

A handwritten signature in black ink, appearing to read 'Yean-Hsi Chang', written in a cursive style.